

(Entomological Series, No. 7.)

THE
AGRICULTURAL LEDGER.

1897—No. 18.

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TERMES TAPROBANES.

(WHITE-ANTS.)

[DICTIONARY OF ECONOMIC PRODUCTS, Vol. VI., Pt. I., P. 434.]

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WHITE-ANTS AS A PEST OF AGRICULTURE.

A Note by the Settlement Officer of Balaghat, Central Provinces, prefixed by certain passages, reprinted from the Indian Museum Notes, "on termites in relation to crops, etc.

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Other PAPERS that may be consulted :

The Agricultural Ledger No. 9 of 1895 (page 4).



CALCUTTA :
OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, INDIA,
1898.

The objects of THE AGRICULTURAL LEDGER are:—

- (1) To provide information connected with agriculture or with economic products in a form which will admit of its ready transfer to ledgers;
- (2) To secure the maintenance of uniform ledgers (on the plan of the Dictionary) in all offices concerned in agricultural subjects throughout India, so that references to ledger entries made in any report or publication may be readily utilised in all offices where ledgers are kept;
- (3) To admit of the circulation, in convenient form, of information on any subject connected with agriculture or economic products to officials or other persons interested therein;
- (4) To secure a connection between all papers of interest published on subjects relating to economic products and the official Dictionary of Economic Products. With this object the information published in these ledgers will uniformly be given under the name and number of the Dictionary article which they more especially amplify. When the subject dealt with has not been taken up in the dictionary, the position it very possibly would occupy in future issues of that work will be assigned to it.

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[*Dictionary of Economic Products, Vol. VI, Pt. I., P. 434.*]

WHITE-ANTS AS A PEST OF AGRICULTURE.

A Note by the Settlement Officer of Balaghat, Central Provinces, prefixed by certain passages, reprinted from the "Indian Museum Notes", on termites in relation to crops, etc.

The correspondence herein reviewed on the subject of damage to plants by white-ants in the Central Provinces is reproduced with permission of the Commissioner of Settlements and Agriculture, Central Provinces.

Introductory.

As a useful introduction to the information thereby furnished, the following particulars of the Pest, taken from the 'Indian Museum Notes', may be given.

Volume I, Page 63.—"White-ants—Sugar-cane in the Giridhi Sub-division, says the officer in charge of it, is especially liable to the attack of this insect. The Manager of the Chota-Nagpur Raj says that its mode of attack is to eat up the root of live crops and cause the plants to die. The ryots, he says, are not acquainted with any remedy for it." C. C. Stevens, Commissioner of Chota-Nagpur, Report dated 26th October 1888, Office of Director of Land Records and Agriculture, Bengal.

White-ants
In Chota-
Nagpur.

"The Personal Assistant to the Director of Land Records and Agriculture, North-Western Provinces, notices in a report dated 30th

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PESTS.	White-ants as a Pest
INTRODUCTORY. White-ants in Cawnpur.	April 1888 that, until the sugar-cane borer (<i>Diatraca saccharalis</i> , <i>Fabr.</i>) appeared near Cawnpur, white-ants had been found to be the most serious pest with which sugar-cane had to contend, though they could always be more or less effectively checked by heavy watering.
Nadia.	<i>Volume I, Page 66.</i> —“White-ants, said to attack the roots, and at times the stems of young plants of all sorts of crops, especially paddy, jute, and <i>arhar</i> , also all vegetables, sugar-cane, and big trees; also rice in granaries, timber in buildings, and books in almirahs. They are said to disappear from the roots of crops when heavy showers fall, but never to disappear from the roots of trees.”
Common white ant described.	“These are white-ants TERMITES (<i>Neuroptera</i>).” (Report from Collector of Nadia forwarded to the Indian Museum by the Director of Land Records and Agriculture, Bengal, see his letter No. 149, Agriculture, dated Calcutta, 17th January 1889.)
White-ants in Gujarat.	<i>Volume II, Page 172, Para. 330.</i> —“ <i>Termes taprobanes</i> , <i>Walker</i> . The common white-ant of Lower Bengal. Very destructive to inferior timber and other dried vegetable matter, also attacking young and unhealthy plants. It is likely to be the species which has been reported as injuring sugar-cane (<i>Saccharum officinarum</i>) in Cawnpur . . .
How sugar-cane is attacked.	<i>Volume IV, Page 80.</i> —“ <i>Termes taprobanes</i> .—The white-ant is very destructive on the light sandy soil of Northern Gujarat.
Remedy.	“It attacks most crops after they are cut and stored, and hay, corn-stacks, etc., must be carefully watched. Corn is always threshed soon after it is cut for fear of white-ants entering the stack.
Mode of application.	“Sugar-cane suffers severely from white-ants. They burrow into and destroy the sets soon after planting, and eat through the junction between the young plant and the parent set, so that the latter withers off. The remedy always employed is castor-cake. Cultivators apply the powdered cake to the roots of the cane, two or three times between May and August. The total quantity given in a season is usually between 1,500lb and 2,000lb per acre. This large application of castor-cake is of course chiefly given as a manure, and not to keep off white-ants, but it serves two purposes very effectively.” (Report, dated 10th August 1894, by Prof. J. H. Middleton, Baroda College, forwarded by the Survey Commissioner and Director, Land Records and Agriculture, Bombay.)

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<i>White-ants as a Pest of Agriculture.</i> <i>From L. S. Carey, Esq., I.C.S., Commissioner of Settlements and Agriculture, Central Provinces, Nagpur, to the Reporter on Economic Products to the Government of India, Calcutta, No. 1668-126, dated Nagpur the 22nd May 1896.</i>	WHITE-ANTS IN THE CENTRAL PROVINCES.
I have the honour to enclose copy of a note, dated 2nd May 1896, by the Settlement Officer of Balaghát, on the damage caused to young plants by white-ants, and to enquire if any efficacious and cheap remedy has been discovered in any other part of India for the prevention of the destruction of trees by termites. I should be obliged by any information on the subject.	
<i>Copy of a Note, dated 2nd May 1896, from the Settlement Officer, Balaghát, to the Commissioner of Settlements and Agriculture, Central Provinces.</i> White-ants are especially fond of young mango trees. In some villages repeated efforts to make a mango grove have failed on account of the roots of the young trees being attacked by white-ants. I once doubted this fact and was disposed to believe that in those villages the people were unusually negligent in watering the saplings, and that first the trees died of thirst and then the white-ants devoured the dead wood, as is their ordinary practice. A scientific forester had told me that white-ants attacked only dead wood, and hence my scepticism as to the statements of the villagers; but I am now convinced that the saplings in many cases die of white-ants and not of other causes, that the attacks of the white-ants on the roots are the cause and not the effect of the trees drying up. The cause that led me to this perception of the truth is that I have attempted to raise a row of half a dozen mango trees close behind my bungalow, and I have had a number of the saplings die, they being in most cases attacked by white-ants. I have dug up three of the trees in different stages of the white-ant disease. One of the plants was almost dead, and it would have been difficult to prove that the white-ants were not innocent scavengers, removing useless dry wood. Another tree was half-dead, and the theory that exonerates the white-ant from the charge of devouring living timber could only be maintained by crediting the termite with a marvellously accurate prophetic instinct that told it's scavenger which of the trees were already	Note by Settlement Officer, Balaghát. Mango saplings often attacked by white-ants. Statement that white- ants will not attack living trees. Disproved by experiment.

PESTS.	White-ants as a Pest
WHITE-ANTS IN THE CENTRAL PROVINCES.	<p>doomed to die and might be removed as useless, for the tree was not yet dead but only likely to die shortly. In the third case the tree still looked quite green, save for a suspicion of unhealthiness about some of its leaves, and on digging it up I found that its roots had been eaten through in places by white-ants, and that a detachment of the voracious termites was actually pushing its way up the heart of the sapling, eating its path through perfectly good, juicy wood. The sight of a channel about $\frac{1}{8}$th of an inch wide thus eaten out up the very centre of a sapling appeared to me to be conclusive proof that the mango tree was dying from the attacks of white-ants pure and simple, and that the theory I had heard put forth in the name of Science by a Forest Officer was untenable. That theory appears to me to confuse two cases: (i) that in which white-ants attack young trees a few feet high, eating out the heart of the tree, full of sap though it is, and doing their work of destruction unseen below the surface, and (ii) that in which white-ants ascend the <i>outside</i> of a tree in search, presumably, of dead branches on top.</p>
Result of experiments to ascertain whether living trees are subject to attack by white-ants.	<p>The attacks of the first of the above kinds are not confined to young trees. I have found fields of <i>tur</i> in which a number of the plants have withered owing to the roots being eaten up by white-ants and in gram fields also I have had similar damage pointed out to me.</p>
Remedies considered.	<p>If, then, it be considered as proved that white-ants do considerable damage to horticulture by attacking the roots of living trees, the question of finding some preventative against their ravages becomes one of practical importance. I have made enquiries as to remedies against the attacks of termites, and found that the popular preventatives are numerous and not usually efficacious.</p> <p>The cultivator starts with the belief that the white-ants have a delicate sense of taste or smell, and exercise their ingenuity in inventing nauseous mixtures with which to water the suffering plant. Water in which fish has been allowed to decompose is believed to be almost as strong in efficacy as in stench. Solutions of salt or tobacco are about the most popular of remedies. The <i>al</i> dye I have heard of in this connection, but it is not thus used locally. The burying of <i>gur</i> in a hole near the tree, in the hope that black-ants will be attracted thereby and will incidentally eat up the white-ant colony, has been put forward by villagers. I have also been told to utilize the fact that bears are greedy eaters of white-ants, and to soak a bear-skin in water</p>

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<p>and put the termites to flight by applying the resulting liquor, highly impregnated with the smell or taste of their enemy's skin.</p> <p>None of these proposals are believed in very much by the people. I have myself tried a decoction of salt and tobacco with some effect, but the young trees are not thriving on the diet any more than the white-ant is. The question of finding a cheap and efficacious remedy is, I submit, worth an enquiry over a larger area than I have been able to arrange for.</p> <p><i>From George Watt, Esq., M.B., C.M., C.I.E., Reporter on Economic Products to the Government of India, to the Commissioner of Settlements and Agriculture, Central Provinces, Nagpur, No. 1716-222 A., dated the 10th June 1896.</i></p> <p>I have the honour to acknowledge the receipt of your letter No. 1668-126, dated the 22nd ultimo, and to thank you for copy of a note therewith enclosed from the Settlement Officer of Balaghāt on the subject of damage caused to young plants by white-ants. With your permission the note will be published at some future time in a review of correspondence on the subject.</p> <p>2. In reply thereto I have pleasure in forwarding herewith a section of my Report on Tea Blights relating to white-ants. On page 11 of that paper is described a preparation, Gondal Fluid that is believed to be a useful preventive.</p> <p>3. As the preparation is still in a measure on its trial, I shall be deeply obliged for the results of any experiments which you may direct to be made with the Fluid.</p> <p>4. I may add that it is believed all the ingredients may be procured from the bazar.</p>	WHITE-ANTS IN THE CENTRAL PROVINCES.

All communications regarding THE AGRICULTURAL LEDGER should be addressed to the Editor, Dr. George Watt, Reporter on Economic Products to the Government of India, Calcutta.

The objects of this publication (as already stated) are to gradually develop and perfect our knowledge of Indian Agricultural and Economic questions. Contributions or corrections and additions will therefore be most welcome.

In order to preserve a necessary relation to the various Departments of Government, contributions will be classified and numbered under certain series. Thus, for example, papers on Veterinary subjects will be registered under the Veterinary Series; those on Forestry in the Forest Series. Papers of more direct Agricultural or Industrial interest will be grouped according as the products dealt with belong to the Vegetable or Animal Kingdom. In a like manner, contributions on Mineral and Metallic subjects will be registered under the Mineral Series.

This sheet and the title page may be removed when the subject-matter is filed in its proper place, according to the letter and number shown at the bottom of each page.

NOTICE.

Future issues of this publication placed under either the "Special Veterinary" or "Special Forest Series" will not be included in the annual enumeration. Such papers are printed for Departmental purposes. Their unfortunate inclusion in the system of annual numbering has led recipients of the ordinary issues to think their sets incomplete.

The following pamphlets have already appeared as Special issues, and have not accordingly been furnished to the public.

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| 1894 | . | . | . | Nos. 8, 9, 10, 11, 13 and 15. |
| 1896 | . | . | . | No. 8. |